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## IN THE CLAIMS:

Please enter the following claim set:

c/ 1. (currently amended): A semiconductor device having a non-volatile memory transistor, comprising:

- a semiconductor layer;
- a floating gate disposed over the semiconductor layer through a first dielectric layer as a gate dielectric layer;
- a second dielectric layer that contacts at least a part of the floating gate and is capable of functioning as a tunneling dielectric layer;
- a control gate formed over the second dielectric layer; and
- ~~an impurity diffusion layer that forms a source region or a drain regions region~~ formed in the semiconductor layer,

wherein a conduction layer is provided above the floating gate, and the conduction layer entirely overlaps the floating gate.

2. (original): A semiconductor device having a non-volatile memory transistor according to claim 1, wherein the conduction layer outwardly protrudes from an end of the floating gate as viewed in a plan view, and a width of a portion of the conduction layer that outwardly protrudes from the end of the floating gate as viewed in a plan view is 0.5  $\mu\text{m}$  or smaller.

3. (original): A semiconductor device having a non-volatile memory transistor according to claim 1, wherein a side end of the conduction layer formed above the floating gate and an end of the floating gate are aligned with each other.

4. (original): A semiconductor device having a non-volatile memory transistor according to claim 1, wherein a width of the conduction layer above a region other than a region where the floating gate is formed is narrower than a width of the conduction layer above the region where the floating gate is formed.

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c1  
5. (original): A semiconductor device having a non-volatile memory transistor according to claim 1, wherein the conduction layer is electrically connected to the semiconductor layer.

6. (currently amended): A semiconductor having a non-volatile memory transistor device as in claim 28, comprising:  
~~—— a semiconductor layer;~~  
~~—— a floating gate disposed over the semiconductor layer through a first dielectric layer as a gate dielectric layer;~~  
~~—— a second dielectric layer that contacts at least a part of the floating gate and is capable of functioning as a tunneling dielectric layer;~~  
~~—— a control gate formed over the second dielectric layer; and~~  
~~—— an impurity diffusion layer that forms a source region or a drain region formed in the semiconductor layer;~~  
~~—— wherein the conductive material includes a plurality of conduction layers are formed at different levels above the floating gate, and the floating gate is entirely overlapped by the plurality of conduction layers as viewed in a plan view.~~

7. (original): A semiconductor device having a non-volatile memory transistor according to claim 6, wherein at least one of the conduction layers outwardly protrudes from an end of the floating gate as viewed in a plan view, and a width of a portion of the conduction layer that outwardly protrudes from the end of the floating gate as viewed in a plan view is 0.5  $\mu\text{m}$  or smaller.

8. (original): A semiconductor device having a non-volatile memory transistor according to claim 6, wherein a side end of the at least one of the conduction layers and an end of the floating gate are aligned with each other.

9. (original): A semiconductor device having a non-volatile memory transistor according to claim 6, wherein the conduction layer is electrically connected to the semiconductor layer.

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c1 10. (previously amended): A semiconductor device having a non-volatile memory transistor, comprising a non-volatile memory transistor including a semiconductor layer, a floating gate disposed above the semiconductor layer, and a control gate formed to extend above a portion of the floating gate, wherein a conduction layer is provided vertically above the floating gate at least in a region where the control gate is not disposed vertically above the floating gate.

11. (previously amended): A semiconductor device having a non-volatile memory transistor, comprising a non-volatile memory transistor including a semiconductor layer, a floating gate disposed above the semiconductor layer, and a control gate formed above the floating gate,

wherein a conduction layer is provided above the non-volatile memory transistor and at least a portion of the conduction layer is located vertically above the floating gate along the entire length of the floating gate, and

a width of the conduction layer located vertically above the floating gate is formed to be greater than a width of the floating gate.

12. (original): A semiconductor device having a non-volatile memory transistor according to claim 11, wherein a width of the conduction layer located other than vertically above the floating gate is formed to be smaller than a width of the conduction layer located vertically above the floating gate.

13. (original): A semiconductor device having a non-volatile memory transistor according to claim 12, wherein the conduction layer is a wiring layer.

14. (original): A semiconductor device having a non-volatile memory transistor according to claim 13, wherein the wiring layer is a lowermost wiring layer.

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c1 15. (currently amended): A semiconductor device having a non-volatile memory transistor as in claim 29, ~~comprising a non-volatile memory transistor including a semiconductor layer, a floating gate disposed above the semiconductor layer, and a control gate disposed above the floating gate,~~

~~wherein the conductive material includes a plurality of conduction layers having a multiple layered structure are provided above the non-volatile memory transistor, and~~

at least one conduction layer among the plurality of conduction layers is provided vertically above the floating gate at least in a region where the control gate is not disposed vertically above the floating gate.

16. (original): A semiconductor device having a non-volatile memory transistor according to claim 15, where the conduction layers are wiring layers.

17. (currently amended): A semiconductor device having a non-volatile memory transistor according to claim 15, further comprising:

a first dielectric layer that defines a gate dielectric layer disposed between the semiconductor layer and the floating gate;

a second dielectric layer that contacts at least a part of the floating gate and is capable of functioning as a tunneling dielectric layer; and

~~an impurity diffusion layer that forms a source region or a drain regions region~~ and drain regions ~~formed~~ in the semiconductor layer.

18. (previously amended): A semiconductor device having a non-volatile memory transistor according to claim 1, wherein the non-volatile memory transistor comprises a first circuit region, and wherein the semiconductor device further comprises a second circuit region, wherein the first circuit region and the second circuit region are formed in a sea of gates structure.

19. (original): A semiconductor device having a non-volatile memory transistor according to claim 18, wherein the second circuit region includes at least a logic circuit.

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c/ 20. (currently amended): A semiconductor device having a non-volatile memory transistor according to claim 10, further comprising:

- a first dielectric layer that defines a gate dielectric layer disposed between the semiconductor layer and the floating gate;
- a second dielectric layer that contacts at least a part of the floating gate and is capable of functioning as a tunneling dielectric layer; and
- an impurity diffusion layer that forms a source ~~region or a~~ and drain regions ~~formed~~ in the semiconductor layer,

21. (original): A semiconductor device having a non-volatile memory transistor according to claim 15, wherein the non-volatile memory transistor comprises a first circuit region, and wherein the semiconductor device further comprises a second circuit region mix-mounted therein.

22. (original): A semiconductor device having a non-volatile memory transistor according to claim 21, wherein the second circuit region includes at least a logic circuit.

23. (currently amended): A semiconductor device having a non-volatile memory transistor, comprising:

- a semiconductor layer;
- a floating gate disposed over the semiconductor layer through a first dielectric layer comprising a gate dielectric layer;
- a second dielectric layer that contacts at least a part of the floating gate and is capable of functioning as a tunneling dielectric layer;
- a control gate formed over the second dielectric layer; and
- one or more conduction layers formed over the floating gate, the floating gate including an upper surface, wherein a line normal to any portion of the upper surface will contact at least one of the one or more conduction layers over the floating gate.

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C<sup>1</sup>

24. (currently amended): A method for manufacturing a semiconductor device having a non-volatile memory transistor, comprising:

- forming a first dielectric layer comprising a gate dielectric layer on a substrate;
- forming a floating gate over the gate dielectric layer;
- forming a second dielectric layer that contacts at least a part of the floating gate and is capable of functioning as a tunneling dielectric layer;
- forming a control gate over the second dielectric layer;
- forming ~~an impurity diffusion layer that forms a source region or a~~ and drain regions ~~region~~ in the semiconductor layer; and
- forming a conduction layer above the floating gate so that a portion of the conduction layer is positioned vertically above the floating gate, where the portion of the conduction layer overlaps the entire floating gate.

25. (previously amended) A method for manufacturing a semiconductor device having a non-volatile memory transistor, comprising:

- forming a floating gate above a semiconductor layer;
- forming a control gate that extends above a portion of the floating gate; and
- forming a conduction layer vertically above the floating gate at least in a region where the control gate is not disposed vertically above the floating gate.

26. (original): A method as in claim 25, comprising forming the conduction layer to have a width greater than that of the floating gate in a region where the conduction layer is disposed vertically above the floating gate.

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C<sup>1</sup> 27. (currently amended): A method for manufacturing a semiconductor device having a non-volatile memory transistor as in claim 30, comprising:

- ~~— forming a floating gate above a semiconductor layer;~~
- ~~— forming a control gate above the floating gate;~~
- ~~— forming a plurality of conduction layers having a multiple layered structure above the non-volatile memory transistor, and~~
- ~~— wherein the conductive material comprises a plurality of at least one of the conduction layers is formed vertically above the floating gate at least in a region where the control gate is not disposed vertically above the floating gate.~~

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C<sup>2</sup> 28. (new): A semiconductor having a non-volatile memory transistor device, comprising:

- a semiconductor layer;
- a floating gate disposed over the semiconductor layer through a first dielectric layer as a gate dielectric layer;
- a second dielectric layer that contacts at least a part of the floating gate and is capable of functioning as a tunneling dielectric layer;
- a control gate formed over the second dielectric layer; and
- source and drain regions in the semiconductor layer,

wherein a conductive material is formed above the floating gate, and the floating gate is entirely overlapped by the conductive material as viewed in a plan view.

29. (new) A semiconductor device having a non-volatile memory transistor, comprising a non-volatile memory transistor including a semiconductor layer, a floating gate disposed above the semiconductor layer, and a control gate formed above the floating gate, wherein a conductive material is positioned vertically above the floating gate at least in a region where the control gate is not disposed vertically above the floating gate.

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C2 30. (new) A method for manufacturing a semiconductor device having a non-volatile memory transistor, comprising:  
forming a floating gate above a semiconductor layer;  
forming a control gate above the floating gate,  
providing a conductive material above the non-volatile memory transistor, and  
wherein the conductive material is formed vertically above the floating gate at least in a region where the control gate is not disposed vertically above the floating gate.

31. (new) A semiconductor device as in claim 23, wherein the one or more conductive layers comprises two conductive layers separated from each other by a dielectric layer.

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